MODIS Radiometric and Geolocation Data Products
Goddard Earth Sciences (GES) DAAC

MODIS/Terra and MODIS/Aqua Data Product Information

Raw Radiances in Counts Daily L1A Swath
(MOD01, MYD01)

Contains counts, raw instrument engineering and spacecraft ancillary data for 36 MODIS channels. Input for geolocation, calibration, and processing. Quality indicators are added to the data to indicate missing or bad pixels and instrument modes. This product includes all MODIS data in digitized (counts) form for all bands, all spatial resolutions, all time tags (converted), all detector views (Earth, solar diffuser, solar diffuser stability monitor, Spectro-Radiometric Calibration Assembly (SRCA), black body, and space view), and all engineering and ancillary data. Visible, short wave infrared, and near infrared measurements (bands 1-19) are only made during the daytime, while radiances for the thermal infrared region (bands 20-25, 27-36) and short wave infrared band 26 are measured continuously.

Calibrated Radiances Daily L1B Swath 1km
(MOD021KM, MYD021KM)

Contains calibrated Earth View observations from MODIS bands 8-36, at 1-km resolution in scientific units. It also contains calibrated data from MODIS bands 1-7, each aggregated to appear at 1-km resolution. These data are generated from the MODIS Level 1A scans of raw radiance. The entire channel data set is thus referenced to the same spatial and geolocation scales.

Calibrated Radiances Daily L1B Swath 500m
(MOD02HKM, MYD02HKM)

Contains calibrated Earth View observations from MODIS bands 3 through 7, at 500-m resolution. In addition, data from MODIS bands 1 and 2 are each aggregated to appear at the 500-m resolution in scientific units. These data are generated from the MODIS Level 1A scans of raw radiance. The entire channel data set is thus referenced to the same spatial and geolocation scales.

Calibrated Radiances Daily L1B Swath 250m
(MOD02QKM, MYD02QKM)

Contains calibrated Earth View observations from MODIS bands 1 and 2, at 250-m resolution in scientific units. These data are generated from the MODIS Level 1A scans of raw radiance. The entire channel data set is thus referenced to the same spatial and geolocation scales.

On-Board Calibrator and Engineering Data Daily L1B
(MOD02OBC, MYD02OBC)

Contains calibration sector data (solar diffuser, solar diffuser stability monitor, Spectro-Radiometric Calibration Assembly (SRCA), black body, and space view sectors) and additional engineering data. The three Earth View (science) products report calibrated data at the three spatial resolutions of 250-m, 500-m and 1-km.

Geolocation Fields Daily L1A Swath 1km
(MOD03, MYD03)

Contains geodetic coordinates, ground elevation, solar and satellite zenith, and azimuth angles for each MODIS 1-km sample. These data are provided as a 'companion' data set to the Level 1B calibrated radiance and the Level 2 data sets to enable further processing. These geolocation fields are determined using the spacecraft attitude and orbit, the instrument telemetry, and a digital elevation model.

Subsampling L1B HDF-EOS Output 5km
(MOD02SSH, MYD02SSH)

Contains a 5km subsample of the 36 bands calibrated and geolocated radiances at-aperture generated from MODIS Level 1B (MOD021KM for MOD02SSH, MYD021KM for MYD02SSH).

Subsampling L1B Binary Output 5km
(MOD02SSN, MYD02SSN)

Contains a binary of the Subsampling L1B HDF-EOS Output 5km (MOD02SSH for MOD02SSN, MYD02SSH for MYD02SSN).

*** Please note that for all MODIS products "MO" is the Terra prefix and "MY" is the Aqua prefix.**

NASA Goddard Earth Sciences (GES) DAAC: http://daac.gsfc.nasa.gov/
GES DAAC Data Access: http://daac.gsfc.nasa.gov/data/
EOS Data Gateway: http://eos.nasa.gov/imswelcome/
MODIS Characterization Support Team (MCST): http://www.msct.ssai.biz/

MODIS Technical Specifications

Orbit:	705 km, 10:30 a.m. descending node (Terra) or 1:30 p.m. ascending node (Aqua), sun-synchronous, near-polar, circular
Scan Rate:	20.3 rpm, cross track
Swath Dimensions:	2330 km (cross track) by 10 km (along track at nadir)
Telescope:	17.78 cm diam. off-axis, afocal (collimated), with intermediate field stop
Size:	1.0 x 1.6 x 1.0 m
Weight:	228.7 kg
Power:	162.5 W (single orbit average)
Data Rate:	10.6 Mbps (peak daytime); 6.1 Mbps (orbital average)
Quantization:	12 bits
Spatial Resolution:	250 m (bands 1-2) 500 m (bands 3-7) 1000 m (bands 8-36)
Design Life:	6 years

Primary Use	Band	Bandwidth[1]	Spectral Radiance[2]	Required SNR[3]
Land/Cloud/Aerosols	1	620 - 670	21.8	128
	2	841 - 876	24.7	201
Land/Cloud/Aerosols Properties	3	459 - 479	35.3	243
	4	545 - 565	29.0	228
	5	1230 - 1250	5.4	74
	6	1628 - 1652	7.3	275
	7	2105 - 2155	1.0	110
	8	405 - 420	44.9	880
Ocean Color/ Phytoplankton/ Fluorescence/ Biogeochemistry	9	438 - 448	41.9	838
	10	483 - 493	32.1	802
	11	526 - 536	27.9	754
	12	546 - 556	21.0	750
	13	662 - 672	9.5	910
	14	673 - 683	8.7	1087
	15	743 - 753	10.2	586
	16	862 - 877	6.2	516
	17	890 - 920	10.0	167
Atmospheric Water Vapor	18	931 - 941	3.6	57
	19	915 - 965	15.0	250
Primary Use	**Band**	**Bandwidth[1]**	**Spectral Radiance[2]**	**Required NE[delta]T(K)[4]**
Surface/Cloud Temperature	20	3.660 - 3.840	0.45(300K)	0.05
	21	3.929 - 3.989	2.38(335K)	2.00
	22	3.929 - 3.989	0.67(300K)	0.07
	23	4.020 - 4.080	0.79(300K)	0.07
Atmospheric Temperature	24	4.433 - 4.498	0.17(250K)	0.25
	25	4.482 - 4.549	0.59(275K)	0.25
Cirrus Clouds Water Vapor	26	1.360 - 1.390	6.00	150(SNR)
	27	6.535 - 6.895	1.16(240K)	0.25
	28	7.175 - 7.475	2.18(250K)	0.25
Cloud Properties	29	8.400 - 8.700	9.58(300K)	0.05
Ozone	30	9.580 - 9.880	3.69(250K)	0.25
Surface/Cloud Temperature	31	10.780 - 11.280	9.55(300K)	0.05
	32	11.770 - 12.270	8.94(300K)	0.05
Cloud Top Altitude	33	13.185 - 13.485	4.52(260K)	0.25
	34	13.485 - 13.785	3.76(250K)	0.25
	35	13.785 - 14.085	3.11(240K)	0.25
	36	14.085 - 14.385	2.08(220K)	0.25

[1] Bands 1 to 19 are in nm; Bands 20 to 36 are in µm
[2] Spectral Radiance values are W/ (m2-µm-sr)
[3] SNR = Signal-to-noise ratio
[4] NE(delta)T = Noise-equivalent temperature difference
Note: Performance goal is 30-40% better than required

MODIS/Terra Product, MODIS/Aqua Product	Spatial Resolution	File Size (in MB)	File Frequency
MOD01, MYD01	250 m to 1 km	534	288 per day
MOD021KM, MYD021KM	1 km	343	288 per day
MOD02HKM, MYD02HKM	500 m	262	144 per day
MOD02QKM, MYD02QKM	250 m	270	144 per day
MOD02OBC, MYD02OBC	250 m to 1 km	57	288 per day
MOD03, MYD03	1 km	61	288 per day
MOD02SSH, MYD02SSH	5 km	15	288 per day
MOD02SSN, MYD02SSN	5 km	7	288 per day

Temporal Coverage: Daily Temporal Resolution: 5-minutes